

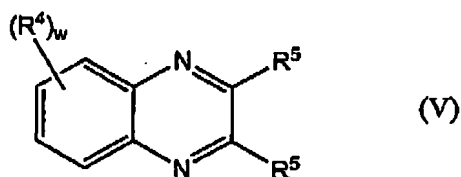
Application No.: 10/612,482  
Docket No.: UC0213USNA4

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APR 18 2007

### Listing of Claims

1. (Currently Amended. ) A photoactive electronic device comprising:
- (a) an anode;
  - (b) a cathode, said cathode having a work function energy level  $E_3$ ;
  - (c) a photoactive layer positioned between said anode and said cathode, said photoactive layer comprising a cyclometalated complex of a transition metal, said cyclometalated complex having a LUMO energy level  $E_2$  and a HOMO energy level  $E_4$ ; and
  - (d) an electron transport and/or anti-quenching layer positioned between said cathode and said photoactive layer, said electron transport and/or anti-quenching layer having a LUMO energy level  $E_1$  and a HOMO energy level  $E_5$ , said layer comprising a quinoxaline derivative having Formula V



wherein:

$R^4$  and  $R^5$  are the same or different at each occurrence and are selected from H, F, Cl, Br, alkyl, heteroalkyl, alkenyl, alkynyl, aryl, heteroaryl, arylalkylene, alkenylaryl, alkynylaryl, heteroarylalkylene, alkenylheteroaryl, alkynylheteroaryl,  $C_nH_aF_b$ ,  $OC_nH_aF_b$ ,  $C_6H_cF_d$ , and  $OC_6H_cF_d$ , or both of  $R^5$  together may constitute an arylene or heteroarylene group;

a, b, c, and d are each an integer such that  $a+b = 2n+1$ , and  $c+d = 5$ ;

n is an integer equal to or greater than 1; and

w is an integer from 0 through 4;

with the proviso that:

- (1)  $E_1 - E_3 < 1\text{eV}$ ,
- (2)  $E_1 - E_2 > 0$ , and
- (3)  $E_4 - E_5 > -1\text{eV}$ .

2. (Canceled)

3. (Original) The device of Claim 1 wherein  $E_4 - E_5 > 0$ .

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4. (Currently Amended.) The device of Claim 1 wherein said electron transport and/or anti-quenching layer has an electron mobility of at least  $10^{-7} \text{ cm}^2/(\text{eV}\cdot\text{sec})$ .

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

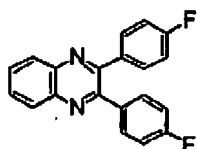
11. (Canceled)

12. (Canceled)

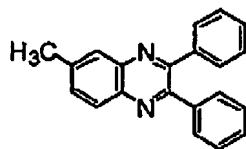
13. (Canceled)

14. (Currently Amended) The device of Claim [[13]] 1 wherein n is an integer from 1 through 12.

15. (Currently Amended) The device of Claim [[12]] 1 wherein the quinoxaline derivative is selected from Formulae V(a), V(b), V(d) through V(i) and V(k) through V(ag).

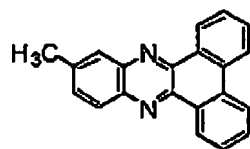


V(a)

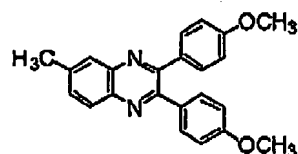


V(b)

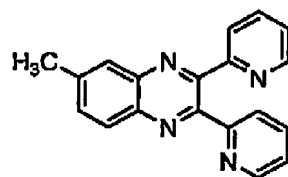
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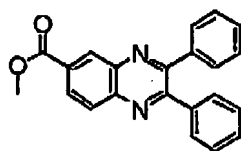
V(d)



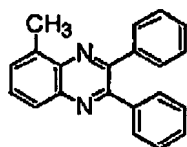
V(e)



V(f)

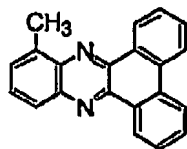


V(g)

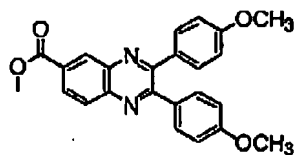


V(h)

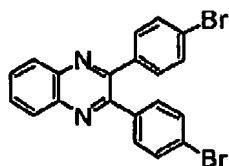
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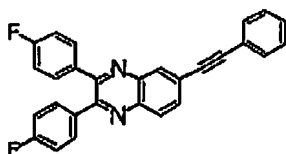
V(i)



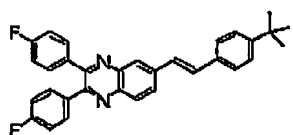
V(k)



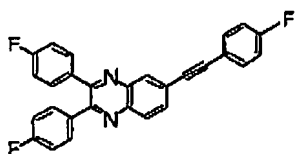
V(l)



V(m)

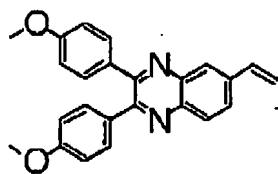


V(n)

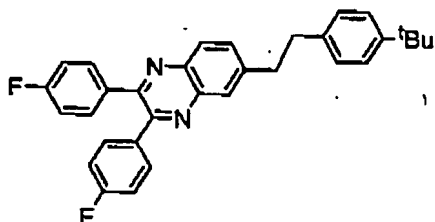


V(o)

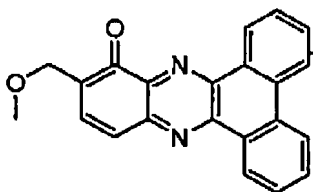
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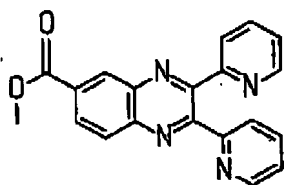
V(p)



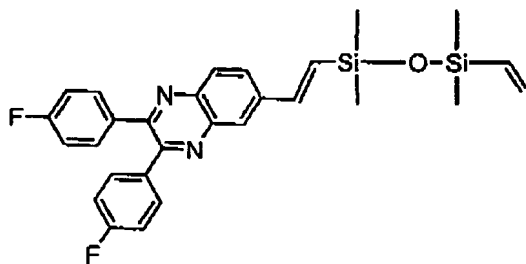
V(q)



V(r)

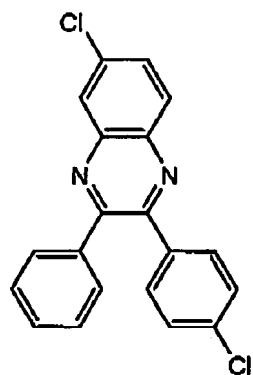


V(s)

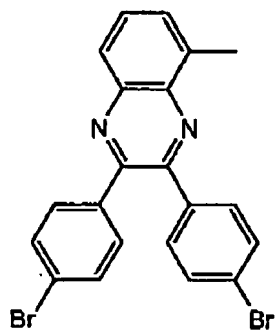


V(t)

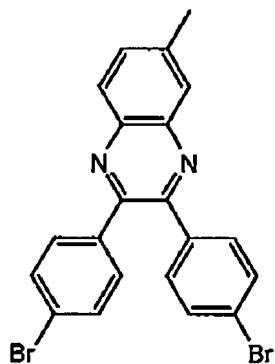
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V(u)

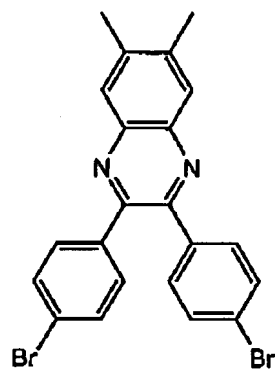


V(v)

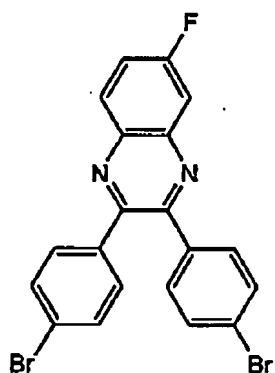


V(w)

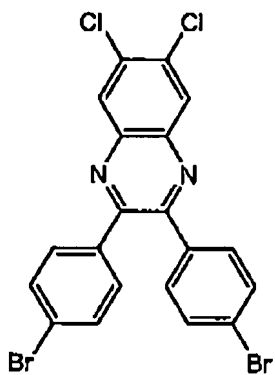
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V(x)

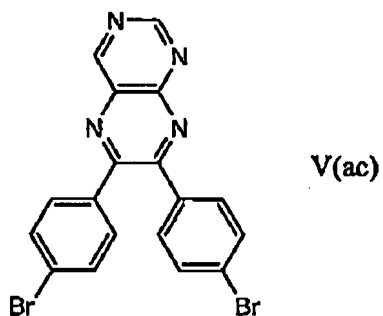
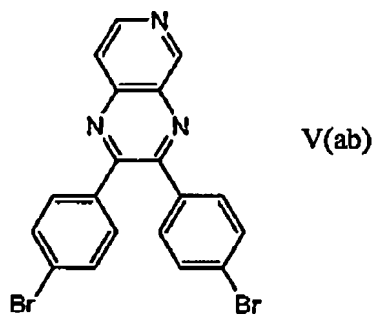
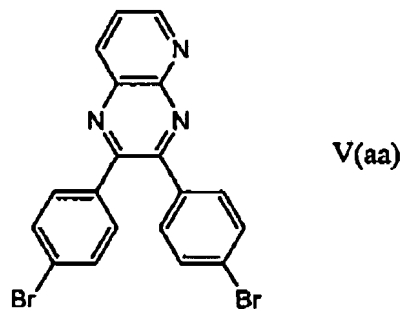


V(y)



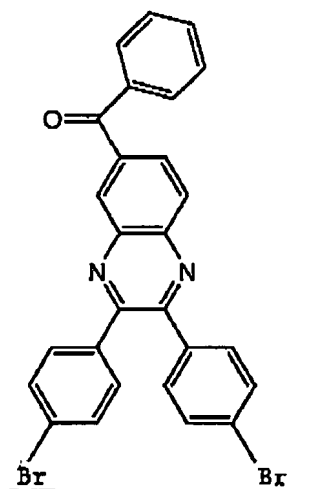
V(z)

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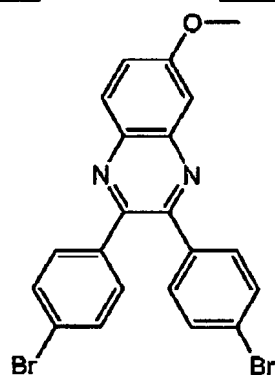




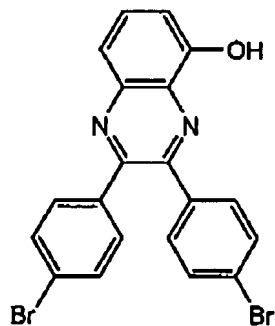
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V(ad)

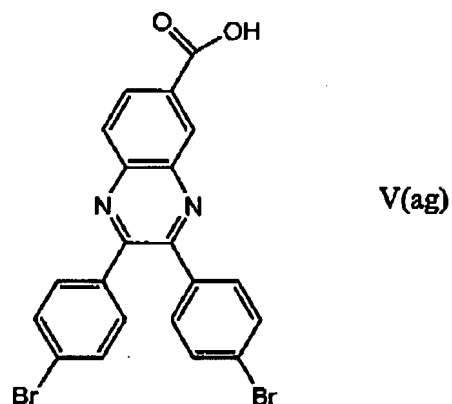


V(ae)



V(af)

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16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Currently Amended) The device of any one of Claims 1, 3, ~~[[ - ]]~~4 and ~~[[ 12 ]]~~ 14-15, wherein the device is a light-emitting diode, a light-emitting electrochemical cell, or a photodetector.